

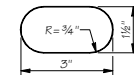
END TYPE A

GIRDER ELEVATION

* OMIT HOLES AND PLACE INSERTS ON THE INTERIOR FACE OF EXTERIOR WEB OF EXTERIOR GIRDERS. PLACE HOLES AND INSERTS PARALLEL TO SKEW. INSERTS SHALL BE 1" BURKE HI-TENSILE, LANCASTER MALLEABLE, DAYTON-SUPERIOR F-62 FLARED THIN SLAB (1" x 4 1/2") FERRULE OR APPROVED EQUAL. (TYP.)

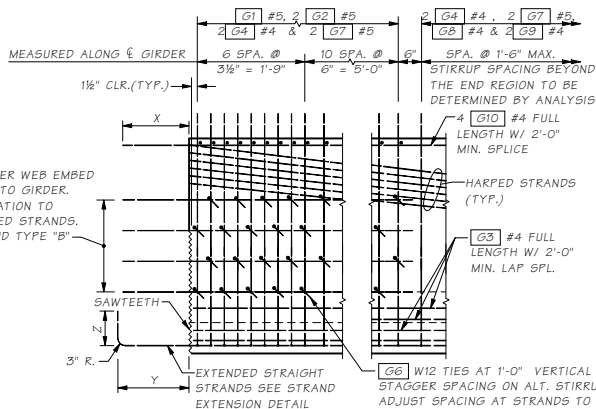
OPEN HOLE DETAIL

BOTTOM HOLE AT END TYPE "B" ONLY



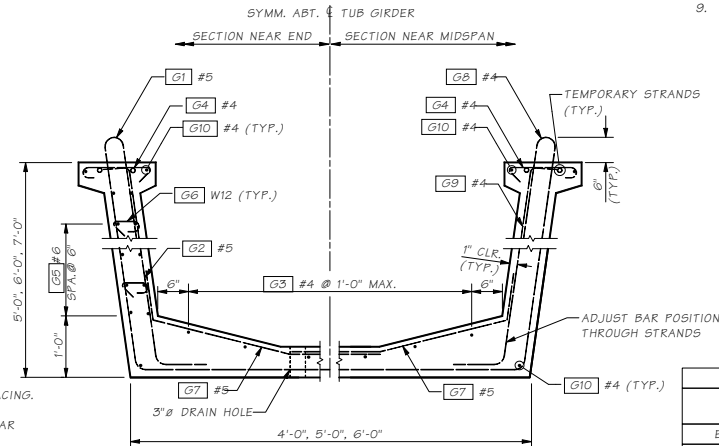
NOTES:

1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE.
2. ALL PRETENSIONED STRANDS SHALL BE [$\frac{1}{8}$ " ϕ OR 0.6" ϕ] LOW RELAXATION STRANDS (AASHTO M203 GRADE 270.)
3. FOR END TYPES A, C AND D CUT ALL STRANDS FLUSH WITH THE GIRDER ENDS AND PAINT WITH AN APPROVED EPOXY RESIN, EXCEPT FOR EXTENDED STRANDS AS SHOWN. FOR END TYPE B CUT ALL STRANDS 1" BELOW CONCRETE SURFACE AND GROUT WITH AN APPROVED EPOXY GROUT.
4. THE TOP SURFACE OF THE GIRDER WEBS SHALL BE ROUGHENED IN ACCORDANCE WITH SECTION 6-02.3(25)H OF THE STANDARD SPECIFICATIONS.
5. LIFTING EMBEDMENTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6-02.3(25)L OF THE STANDARD SPECIFICATIONS.
6. CAUTION SHALL BE EXERCISED IN HANDLING AND PLACING GIRDERS. ALL GIRDERS SHALL BE CHECKED BY THE CONTRACTOR TO ENSURE THAT THEY ARE BRACED ADEQUATELY TO PREVENT TIPPING AND TO CONTROL LATERAL BENDING DURING SHIPPING.
7. FORMS FOR BEARING PAD RECESSES SHALL BE CONSTRUCTED AND FASTENED IN SUCH A MANNER AS TO NOT CAUSE DAMAGE TO THE GIRDER DURING THE STRAND RELEASE OPERATION.
8. TEMPORARY STRANDS ARE PRETENSIONED OR POST-TENSIONED. IF PRETENSIONED, THESE TEMPORARY STRANDS SHALL BE DEBONDED OVER ALL BUT THE END 10'-0" OF THE GIRDER LENGTH. AS AN ALTERNATE, TEMPORARY STRANDS MAY BE POST-TENSIONED BEFORE THE GIRDER IS LIFTED FROM THE FORM. TEMPORARY STRANDS SHALL BE CUT BEFORE THE INTERMEDIATE DIAPHRAGMS ARE CAST. PATCH RECESS WITH CEMENTITIOUS GROUT; DO NOT ALLOW MOISTURE IN RECESS PRIOR TO GROUTING.
9. P.C. GIRDER ENDS SHALL BE PLUMB IN THE FINAL GIRDER'S ERECTED POSITION.



TYPICAL END ELEVATION

END TYPE C SHOWN - OTHER END TYPES SIMILAR.



SECTION ~ REINFORCEMENT

FOR DRAIN HOLE LOCATIONS SEE "FRAMING PLAN" SHEET.

1/4 points of span for span lengths over 120'-0".
1/2 points of span for span lengths 80'-0" to 120'-0".
Midpoint of span for span lengths 40'-0" to 80'-0".

Notes to designer						
DIAPHRAGM TYPE	END TYPE	BEARING RECESS	X	Y	Z	SAWTEETH
End diaph. on girder	A	YES	1'-10"	1'-6"	9"	YES
"L" Abutment	B	YES	0	0	0	NO
Hinge diaph. on interm. pier	C	NO	1'-10"	1'-6"	9"	YES
Fixed diaph. on interm. pier	D	NO	1'-10"	ALT. 1 OR ALT. 2 STRAND EXTEN.		YES
Multi. simple spans on interm. pier	E	YES	0	0	0	NO

Bridge Design Engr.	M:\STANDARDS\Girders\Trapezoidal Tub\SI\ TRAPEZOIDAL TUB 1.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailed By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Specifier						
DATE	REVISION	BY	APPD			

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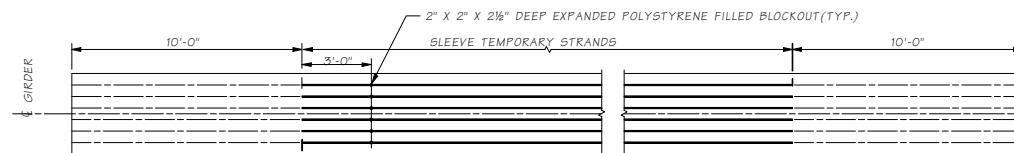
STANDARD
PRESTRESSED CONCRETE GIRDERS

TRAPEZOIDAL TUB S-I-P DECK
PANEL GIRDER DETAILS 1 OF 4

BRIDGE SHEET NO.	
SHEET	
OF	
SHEETS	

TEMPORARY STRAND CUTTING SEQUENCE

1. ERECT AND BRACE GIRDERS.
2. REMOVE EXPANDED POLYSTYRENE IN 2" X 2" RECESSES IN TOP FLANGE OF GIRDERS.
3. CUT STRAND AND PLASTIC SLEEVE IN 2" X 2" RECESS.
4. REMOVE ALL MOISTURE IN RECESS PRIOR TO FILLING RECESS WITH GROUT.
5. CAST INTERMEDIATE & END DIAPHRAGMS.
6. PLACE DECK CONCRETE.
7. SEE SHEET W436 GIRDER DETAILS 3 OF 3 FOR 2" RECESS BLOCKOUT DETAILS.



PLAN VIEW OF TEMPORARY STRANDS

TRANSVERSE REINFORCING AT SKEWED ENDS

ONLY TRANSVERSE REINF. SHOWN



SECTION ~ P.C. GIRDER

* SMOOTH FINISH ON TOP OF GIRDER.

*** 1'-0" FOR BOTTOM FLANGE WIDTH 4'-0" & 5'-0"
2'-0" FOR BOTTOM FLANGE WIDTH 6'-0"

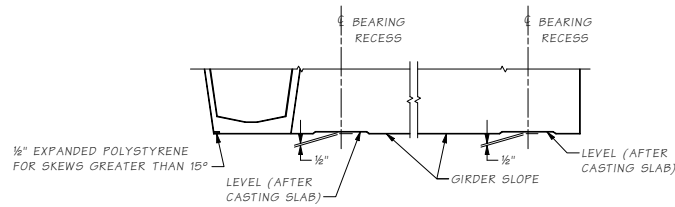
Appendix A

Prestressed Concrete Superstructure

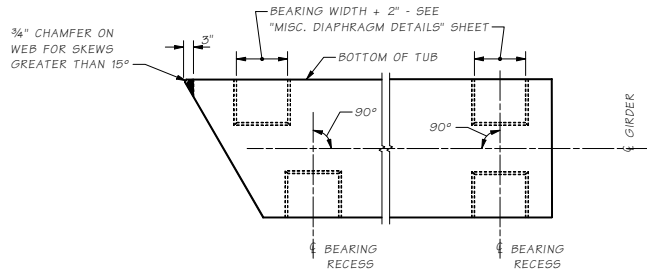
BRIDGE DESIGN MANUAL

JANUARY 2008

Trapezoidal Tub S-I-P Deck Panel Girder - Details 2 of 4

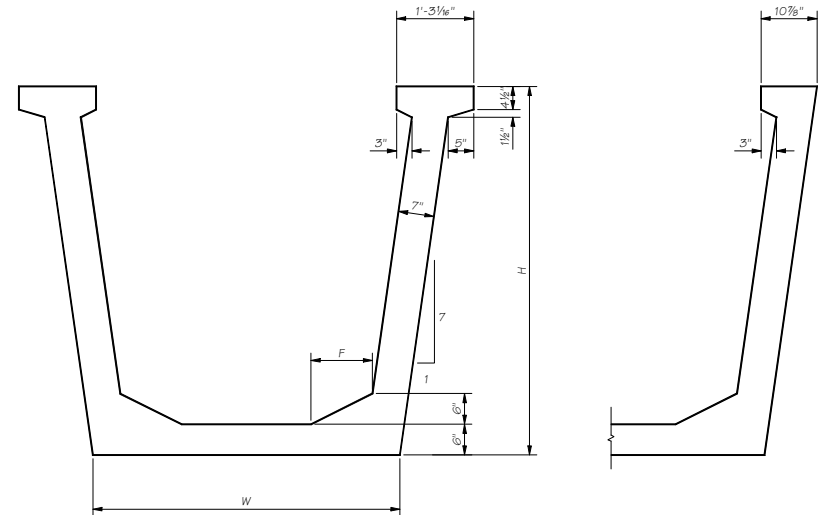


ELEVATION



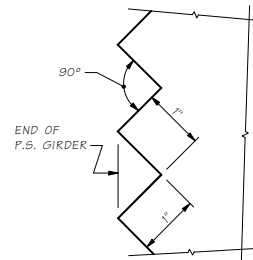
PLAN

BOTTOM OF TUB SPALL PROTECTION



TYPICAL SECTION

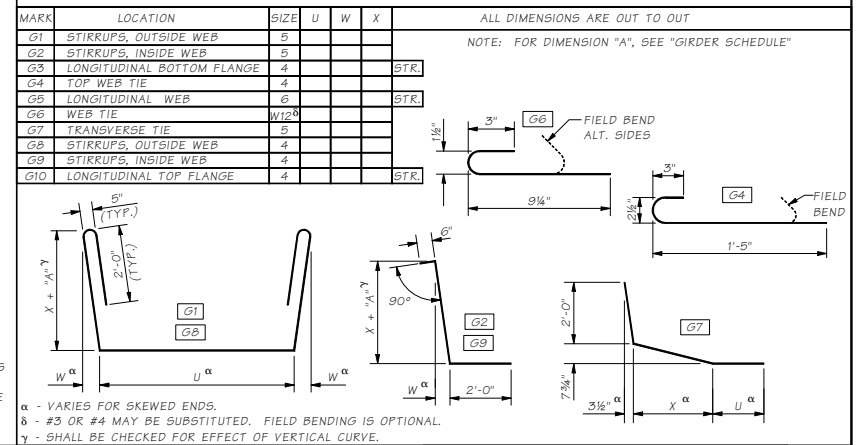
TYPICAL SECTION EXTERIOR GIRDER



SAWTOOTH DETAILS

SAWTEETH ARE FULL WIDTH. USE SAWTOOTH KEYS FROM BOTTOM OF BOTTOM FLANGE TO BOTTOM OF LOWEST HARPED STRAND AS WELL AS TOP FLANGE ADJACENT TO HARPED STRANDS AS SHOWN ON "TYPICAL END ELEVATION" THIS SHEET.

BENDING DIAGRAM



Bridge Design Engr.	M:\STANDARDS\Girders\Trapezoidal Tub\SI-P TRAPEZOIDAL TUB 2.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailed By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Specialist						
DATE	REVISION	BY	APPD			

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STANDARD
PRESTRESSED CONCRETE GIRDERS

TRAPEZOIDAL TUB S-I-P DECK
PANEL GIRDER - DETAILS 2 OF 4

BRIDGE
SHEET
NO.
OF
SHEETS

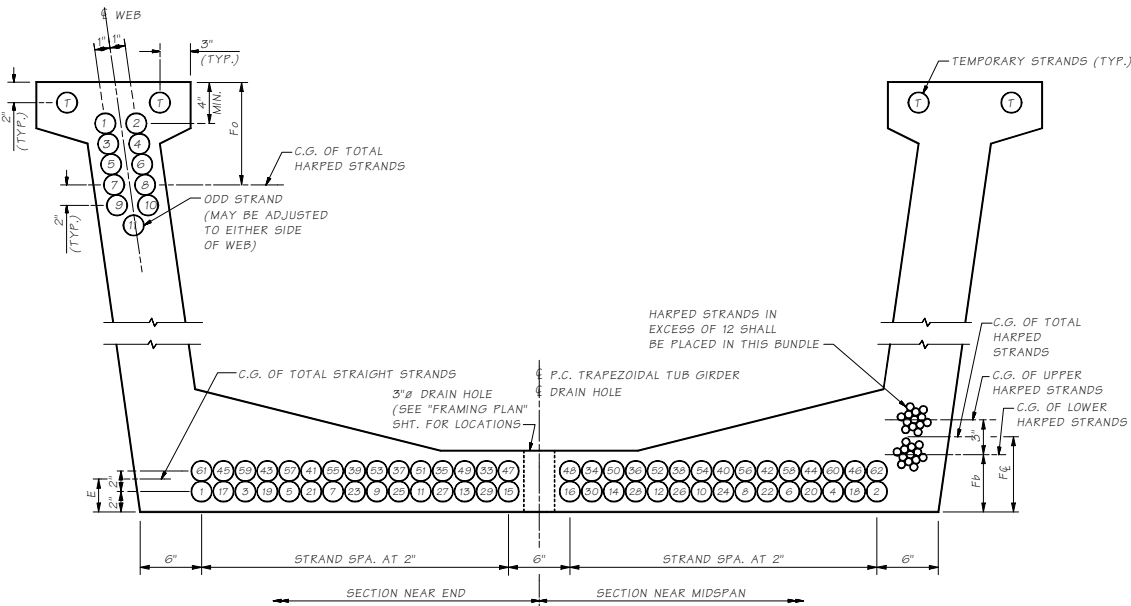
5.6-A17-2

NO. OF SHEETS

GIRDER SCHEDULE

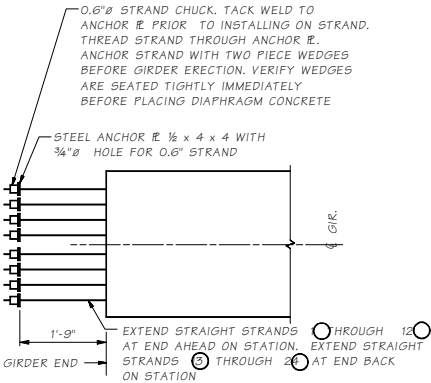
DIMENSION "A" AT E BEARINGS =										BASED ON GIRDER DEFLECTION = "D" AT TIME OF SLAB PLACEMENT (120 DAYS)													
SPAN	GIRDER	END 1 TYPE	END 2 TYPE	L	θ_1	θ_2	PLAN LENGTH (ALONG GIRDER GRADE)	MIN. CONC. COMPR. STRENGTH		HARPED		STRAIGHT		TEMPORARY		LOCATION OF C.G. STRANDS				C	D @ 40 DAYS	D @ 120 DAYS	Ld
								# FINAL F'C (KSI)	# RELEASE F'CI (KSI)	NO. OF STRANDS	JACKING FORCE (KIPS)	NO. OF STRANDS	JACKING FORCE (KIPS)	NO. OF STRANDS	JACKING FORCE (KIPS)	E	F _E	F _b	F _o				
-	-	-	-	-	-	-	..'-.."	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE:
Dimensions shall be shown in Imperial units to the nearest 1/8th inch.

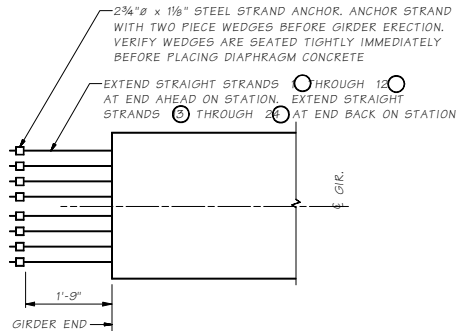


STRAND PATTERN

STRAND LOCATION SEQUENCE SHALL BE AS SHOWN 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



ALTERNATE # 1



ALTERNATE # 2

STRAND EXTENSION DETAIL
FOR END TYPE D

NOT ALL EXTENDED STRANDS ARE SHOWN

5.6-A17-4

SHEET

JOB NO.

SR

BRIDGE DESIGN ENGR.

SUPERVISOR

DESIGNED BY

CHECKED BY

DETAILED BY

BRIDGE PROJECTS ENGR.

PRELIM. PLAN BY

ARCHITECT/SPECIALIST

DATE

REVISION

BY

APPD

PROJECT NO.

STATE

FED. AID PROJ. NO.

SHEET NO.

TOTAL SHEETS

JOB NUMBER

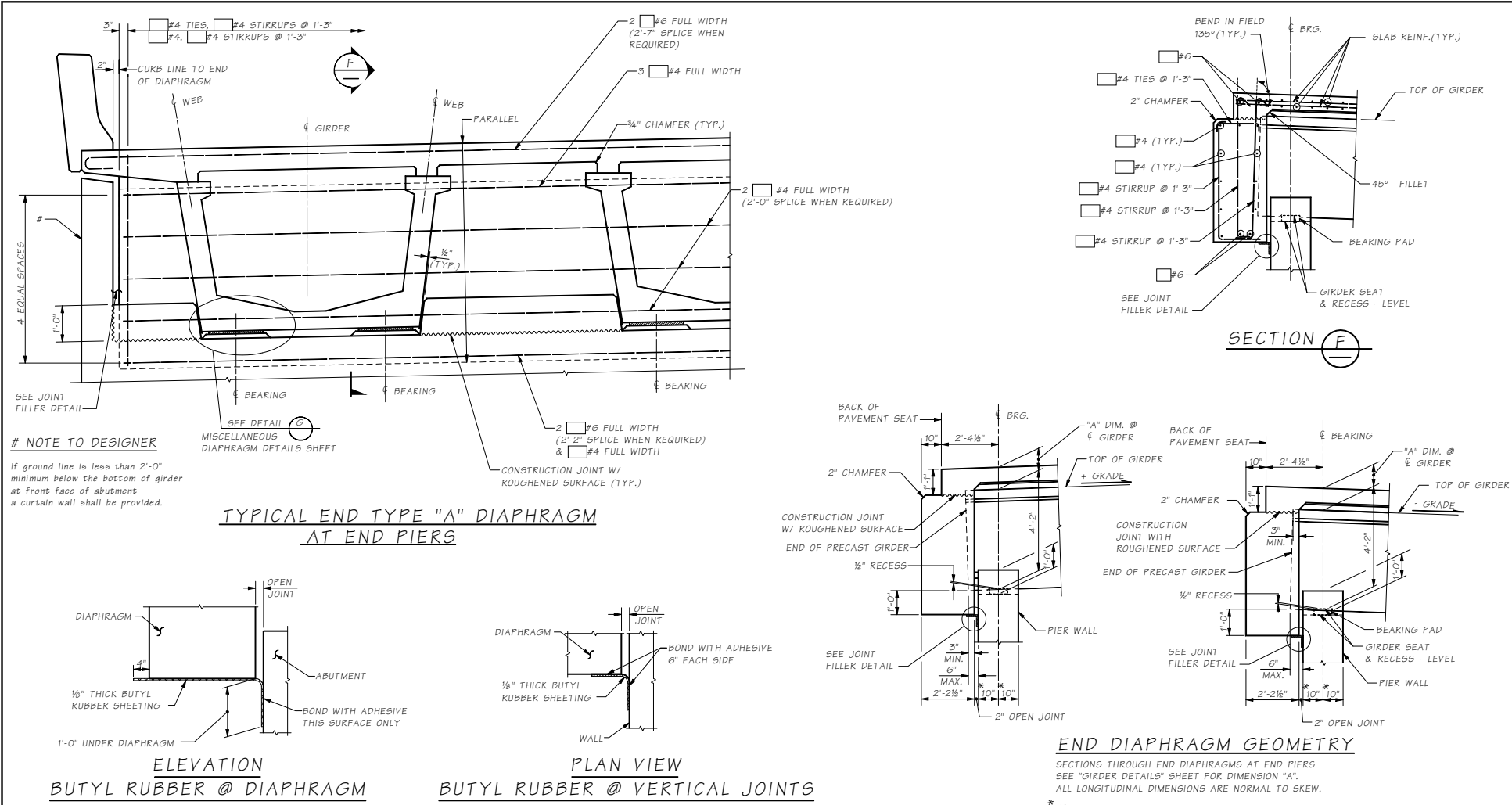
BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

TRAPEZOIDAL TUB S-I-P DECK

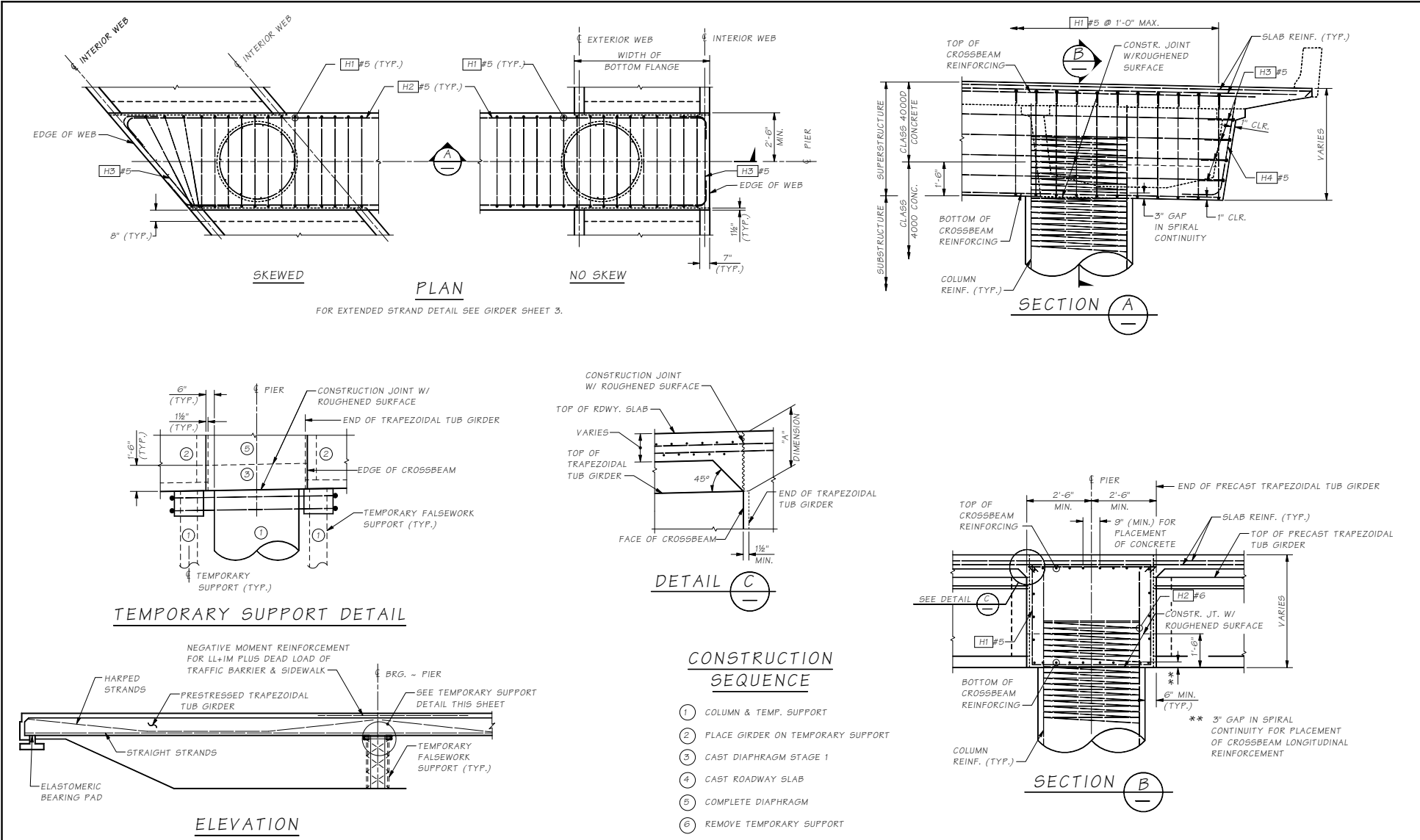
PANEL GIRDER - DETAILS 4 OF 4



NOTE:									
1. GIRDERS SHALL BE HELD RIGIDLY IN PLACE WHEN DIAPHRAGMS ARE PLACED.									
2. REINFORCING BAR SHALL BE THREADED THROUGH HOLES IN GIRDERS PRIOR TO PLACING OF EXTERIOR GIRDERS. SEE PLANS FOR "TRAFFIC BARRIER" DIMENSIONS AND LOCATION. SEE "GIRDER DETAILS" SHEET FOR DIMENSION "A".									
3. END DIAPHRAGM MAY BE CAST ON GRADE. IF SO, THE UPPER LEG OF THE JOINT FILLER SHALL FORM THE BOTTOM FACE FULL WIDTH.									
4. JOINT FILLER TYPE 1 SHALL BE USED TO COVER ALL VERTICAL END DIAPHRAGM JOINTS. EITHER JOINT FILLER TYPE 1 OR JOINT FILLER TYPE 2 SHALL BE USED TO COVER ALL HORIZONTAL END DIAPHRAGM JOINTS.									
BRIDGE LENGTH									
JOINT									
SPECIAL DESIGN									
BRIDGE DESIGN ENGR.									
SUPERVISOR									
DESIGNED BY									
CHECKED BY									
DETAILED BY									
BRIDGE PROJECTS ENGR.									
PRELIM PLAN BY									
ARCHITECT/SPECIALIST									
DATE									
REVISION									
BY									
APPROD									
BRIDGE AND STRUCTURES OFFICE									
Washington State Department of Transportation									
STANDARD PRESTRESSED CONCRETE GIRDERS									
TRAPEZOIDAL TUB S-I-P DECK PANEL GIRDER - END DIAPHRAGM ON GIRDER DETAILS									
BRIDGE SHEET NO.									
SHEET									
OF									
SHEETS									

5.6-A17-5

SHEET NO.



Bridge Design Engr.	M:\STANDARD\Girders\Trapezoidal Tub\SI-P TRAPEZOIDAL TUB RAISED CROSSBEAM.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailed By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Spec'let						
DATE	REVISION	BY	APPD.			

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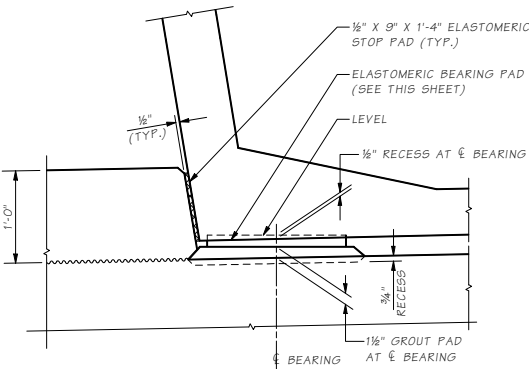


STANDARD
PRESTRESSED CONCRETE GIRDERS

TRAPEZOIDAL TUB S-I-P DECK PANEL GIRDER
- RAISED CROSSBEAM DETAILS

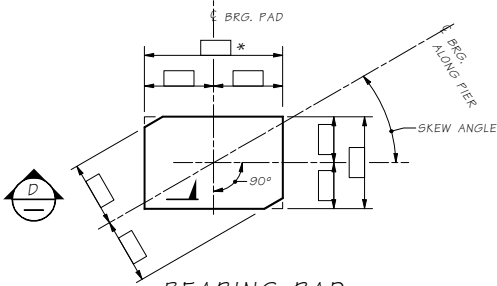
BRIDGE SHEET NO.
SHEET
OF
SHEETS

5.6-A17-6



DETAIL G

- NOTES:
1. GIRDER STOPS SHALL BE CONSTRUCTED AFTER GIRDER PLACEMENT.
 2. ELASTOMERIC STOP PADS SHALL BE CEMENTED TO GIRDER STOP WITH APPROVED ADHESIVE.

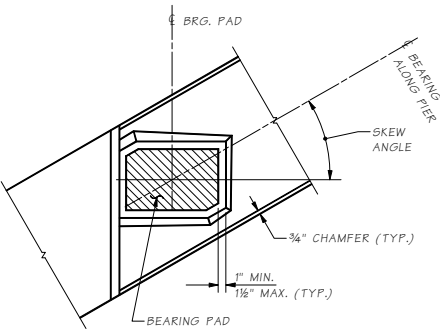


BEARING PAD

LAMINATED ELASTOMERIC BRIDGE PAD [] THICK ([] SHIMS).

Skew angle shown at 30°.

* The edge of the bearing pad shall be set at 1" from the edge of the bottom flange.



GROUT PAD DETAIL

Skew angle shown at 30°.

5.6-A17-7

Bridge Design Engr.	M:\STANDARD\Girders\Trapezoidal Tube\SIP TRAPEZOIDAL TUB MISC DETAILS.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailed By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Specialet						
DATE	REVISION	BY	APPD			

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STANDARD
PRESTRESSED CONCRETE GIRDERS

TRAPEZOIDAL TUB S-I-P DECK PANEL GIRDER
MISCELLANEOUS BEARING DETAILS

BRIDGE SHEET NO.
SHEET
OF
SHEETS